Name:_____Date:_____Period:_____

Ch. 6 Test Review CYU

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Growth/Decay Factor (b)	1, 2		
Growth/Decay Rate (r)	1, 2	9, 10	
y-intercepts & Initial Value (a)	1, 2	9, 10	
Exponential Regression	1, 2	8, 9, 10	
Graphing Exponentials & Logarithmic	1, 2	3, 4, 5	
Describing Transformations		3, 4, 5	
Identifying Asymptotes	3, 4, 5		
Identifying Pivot Points	3, 4, 5		
Domain & Range in interval notation	6		
End Behavior		7	
Real-World Application			8, 9, 10
Predicting using Models		8, 9, 10	
Evaluating Logarithms			11
Expanding Logarithms			11
Condensing Logarithms			11
Solving Exponential Equations/Inequalities			12
Solving Logarithims Equations/Inequalities			12

Study Guide List:

Common Log
Natural Log
Common Log Base
Natural Log Base
Logarithmic Transformations
Exponential Transformations
Evaluating Logarithmic Expressions
Applying Logarithmic Properties
Writing Logarithmic Equations from a graph

Writing Exponential Equations from a graph
Exponential Regression
Solve Logarithmic Equations using Exponentials
Solve Exponential Equations using Logarithms
Logarithmic Application Problems
Exponential Application Problems

*Notes, CYU, Dailies, Quiz Review, and Quizzes
will all help study!*

1 – 2: For each table, decide if it's exponential growth or exponential decay. Then, identify the y-intercept (coordinate form) and the growth or decay **rate and factor**. Lastly, write an exponential equation, using regression on the calculator, and create a graph on the coordinate plane provided below.
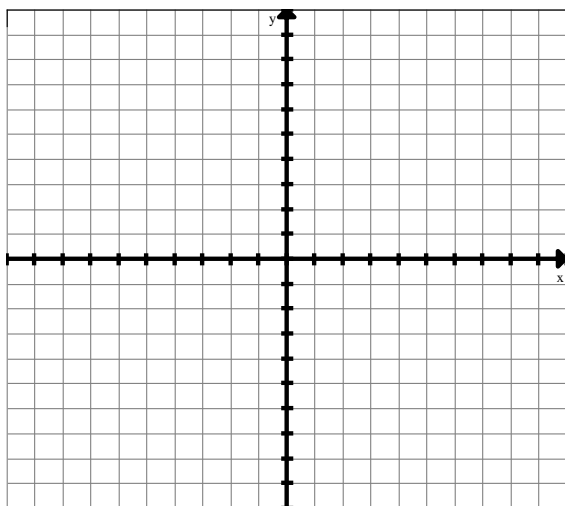
1. Growth or Decay

x	−2	−1	0	1	2
y	32	8	2	$\frac{1}{2}$	$\frac{1}{8}$

y-intercept: _____

G/D rate: _____ G/D factor: _____

equation: _____

2. Growth or Decay
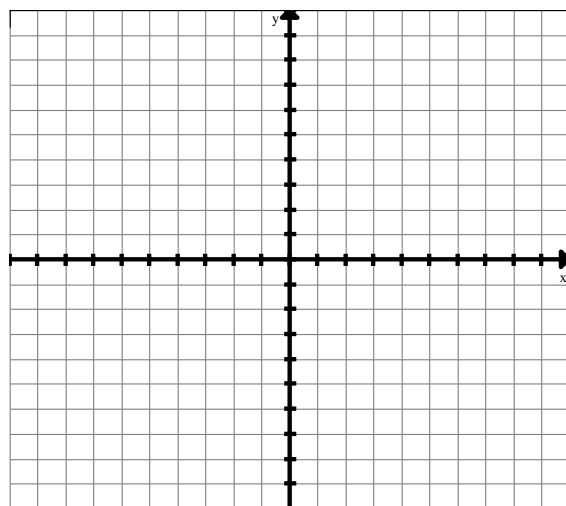
x	0	1	2	3	4
y	1	5	25	125	625

y-intercept: _____

G/D rate: _____ G/D factor: _____
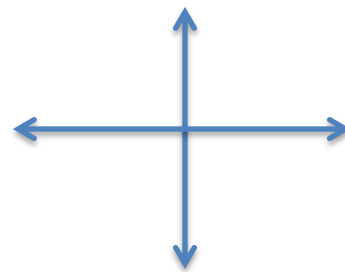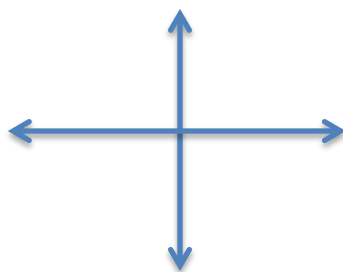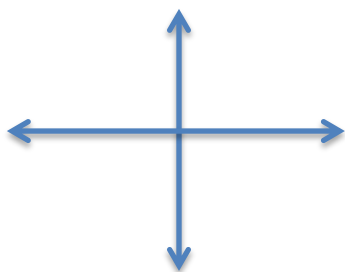
equation: _____

3 – 5: State the transformations and **sketch** a graph of the parent and the new equation. Be sure to include the asymptote and pivot point on your graph!

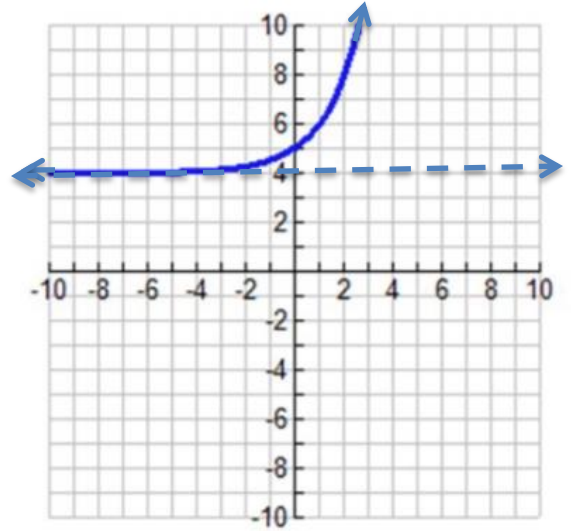3. $f(x) = \frac{1}{4}(2)^{x-2} + 3$ 4. $g(x) = -\frac{1}{2}(6)^{-x-1} - 1$ 5. $h(x) = 2\left(\frac{1}{4}\right)^{x} + 4$

6. Given the graph, write the domain and range in interval notation.
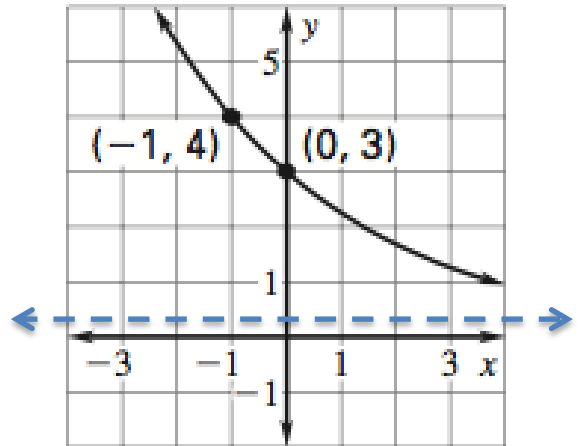
Domain: _____

Range: _____

7. Given the graph of the exponential decay function, describe the end behavior.

As x → _____, y → _____.

As x → _____, y → _____.

$(-1, 4)$ $(0, 3)$

8. In the graph, the population density is an exponential function of time. Use the graph to write an equation and make a prediction. (HINT: create a T-chart from the graph!)

a. Equation:

_____

b. When the time value is 7, make a prediction of the population density using your equation from above.

_____
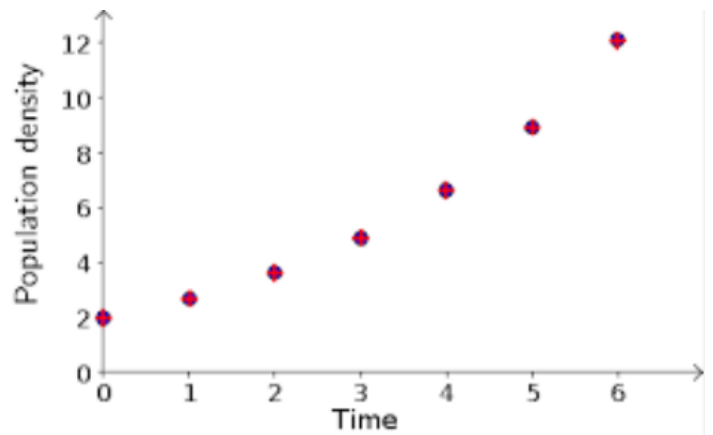
9. Mrs. Ramirez deposited $10,000 into a money market account that is earning compound interest at a rate of 3% per year. This can be represented with $y = a(1 + r)^x$, where y is the total amount, a is the initial amount, r is the rate, and x is the time in years.

a. Identify each of the following: a = _____   r = _____

b. Write an equation: _____

c. In 7 years, how much money will Mrs. Ramirez have in her account? _____

d. In 22 years, how much money will she have in her account? _____

10. A new car that originally costs $21,000 depreciates 15% per year. This can be represented with the exponential decay function $y = a(1 - r)^x$, where y is the total amount, a is the initial amount, r is the rate, and x is the time in years.

a. Identify each of the following: a = _____   r = _____

b. Write an equation: _____

c. Create a table to represent the depreciation value of the car over 7 years.

x	0							
y								

11. Evaluate the following logarithms. Expand or condense when appropriate.

a. $\log_3 27x^7$

b. $\log_7 \dfrac{b^2}{6}$

c. log x + 3log 2 – log y

d. $\log_5 (6a)^3$

e. 3 log 4 – 2(log n + log m)

f. $\dfrac{r \log d}{2}$

12. Solve the following equations and inequalities. Check for extraneous solutions.

a. $3.4e^{2-2n} - 9 = -4$

b. $5 \cdot 6^{3m} = 20$

c. $16^{n-7} + 5 < 24$

d. $-2\log_5 7x \geq 2$

e. $\log_{12}(v^2 + 35) = \log_{12}(-12v - 1)$

f. $-6 \log_3 (x - 3) = -24$

CYU Reflection: *How far can you go: basic, intermediate, or advanced?*
Rate your mastery level!
How confident are you with the skills this CYU covered? Circle the score you would give yourself.

1	2	3	4	5	6	7	8
Basic		Intermediate			Advanced		Solved ALL!